

WHAT IS CLAIMED IS:

1. A transportable system for separating materials in a waste stream, comprising:
an arrangement of separation and grinding devices mounted on a transportable platform, the separation and grinding devices being configured in the arrangement to produce three or more product streams from a plastic-rich feed mixture, the product streams including a coarse heavy stream, a ground plastic-rich product stream, and at least one ground light material stream.
2. The system of claim 1, wherein the arrangement comprises:
an air separator for separating metal materials from the plastic-rich mixture; and
a grinder in operable communication with the air separator such that at least a portion of a material exiting the separator enters the grinder.
3. The system of claim 2, further comprising:
a second separator mounted on the transportable platform in operable communication with the grinder, the second separator being configured to receive a ground material stream from the grinder and to separate at least one ground light material stream from the ground material stream.
4. The system of claim 3, wherein:
the second separator uses air to separate a light fraction.
5. The system of claim 3, further comprising:
an auger or feeder configured to receive a product stream from the air separator, the grinder or the second separator.
6. The system of claim 3, further comprising:
one or more fans configured to push or pull material through the system.

7. The system of claim 1, wherein:
the platform is included in an enclosure housing the arrangement.
8. The system of claim 1, wherein:
the platform is included in a shipping container, a truck trailer, or a railroad car.
9. A method of processing a plastic-rich mixture, comprising:
delivering to a waste-goods location a transportable separation system including an arrangement of separation and grinding devices mounted on a transportable platform;
operating the system to process a plastic-rich feed mixture to produce at least three product streams, the product streams including a coarse heavy stream, a ground plastic-rich product stream, and at least one ground light material stream; and
removing the system from the waste-goods location.
10. The method of claim 9, wherein:
the devices of the system remain mounted on the transportable platform throughout the delivering, operating and removing steps.
11. The method of claim 9, further comprising:
transporting the ground plastic-rich product stream to a plastic recovery facility.